

**Amendments to the Claims:**

Please cancel Claim 4.

Please amend Claims 1-3, 5-8, 10-12 and 15.

The Claim Listing below will replace all prior versions of the claims in the application:

**Claim Listing:**

1. (Currently Amended) [[A]] An in vitro method for the production of a library of heparan sulfate derivatives said method comprising ~~a combination of chemical modification steps~~ chemically modifying a heparin sulfate starting material wherein in which at least one, two or three of said chemical modification steps of said combination are selected from the ~~group steps~~ A to O wherein:
  - A. partial de N-sulfation in glucosamine<sub>2</sub>
  - B. complete de N-sulfation in glucosamine<sub>2</sub>
  - C. partial de N-acetylation in glucosamine<sub>2</sub>
  - D. complete de N-acetylation in glucosamine<sub>2</sub>
  - E. re N-sulfation in glucosamine of all available amino groups<sub>2</sub>
  - F. re N-acetylation in glucosamine of all available amino groups<sub>2</sub>
  - G. partial re N-sulfation in glucosamine<sub>2</sub>
  - H. partial re N-acetylation in glucosamine<sub>2</sub>
  - I. complete de-O-sulfation at position 6 of glucosamine<sub>2</sub>
  - J. partial de-O-sulfation at position 6 of glucosamine<sub>2</sub>
  - K. partial de-O-sulfation at both position 6 of glucosamine and 2 of iduronate accompanied by complete de N-sulfation in glucosamine<sub>2</sub>[[.]]<sub>2</sub>
  - L. complete de-O-sulfation at both position 6 of glucosamine, 2 of iduronate and de-N-sulfation in glucosamine<sub>2</sub>
  - M. partial de-O-sulfation at position 6 and complete de-N-sulfation of glucosamine<sub>2</sub>
  - N. complete de-O-sulfation at position 2 of iduronate<sub>2</sub> and
  - O. complete de-O-sulfation at position 6 and de N-sulfation of glucosamine and partial de-O-sulfation of iduronate<sub>2</sub>

wherein at least one modification in said combination is a partial modification.

2. (Currently Amended) The method of claim [[15]] 1 wherein all steps of said combination are chosen from the group A to O.
3. (Currently Amended) The method according to claim [[15]] 1 wherein said library is structurally more diverse than the heparan sulfate starting material from which it is derived.
4. (Canceled)
5. (Currently Amended) The method according to claim [[15]] 1 wherein at least one complete or partial modification is carried out at the amino function (N-) of glucosamine.
6. (Currently Amended) The method according to claim [[15]] 1 wherein at least two modification steps in said combination are partial modifications.
7. (Currently Amended) The method according to claim [[15]] 1 wherein at least three modification steps in said combination are partial modifications.
8. (Currently Amended) The method according to claim [[15]] 1 wherein a first step of modification is chosen from A, B, C or D, such that wherein step A is chosen, optional subsequent steps are one or more of E, F, G, H, I, J, K, L, M, N, O, in any combination, or wherein step B is chosen, optional simultaneous or subsequent steps are one or more of E, F, G, H, I, J, K, L, M, N, O, in any combination.
9. (Original) The method according to claim 8 wherein a second step of modification chosen from E, F, G, or H is performed upon the modified products of said first step.

10. (Currently Amended) The method according to claim 9 wherein a third step of modification chosen from A, B, C, D, E, F, G, H, I, J, K, L, M, N, or O is performed upon the modified products of said second step.
11. (Currently Amended) The method according to claim 10 wherein a fourth step of modification chosen from A, B, C, D, E, F, G, H, I, J, K, L, M, N or O is performed upon the modified products of said third step.
12. (Currently Amended) The method according to claim 11 wherein the combination of modifications is chosen from ~~a first~~ three steps and ~~second to a~~ fourth optional step[[s]] such that:

First Step	<del>Optional</del> Second Step	<del>Optional</del> Third Step	Optional Fourth Step
B(+/-any of I to O)	G	F/H	
B(+/-any of I to O)	H	E/G	
B(+/-any of I to O)	E		
B(+/-any of I to O)	F		
A	F	+/-any of I to O	E/G
A	H	+/-any of I to O	E/G

13. (Original) The method according to claim 12 wherein said first step modification is B (+/- any of I to O), said second step modification is H, and said third step modification is E or G.
14. (Original) The method according to claim 12 wherein said first step modification is B (+/- any of I to O), said second step modification is G, and said third step modification is F or H.
15. (Currently Amended) The method according to claim 1, ~~the method~~ comprising the additional steps ~~(singly or jointly)~~ of selected from the groups (i), (ii) and (iii).

wherein:

group (i) is steps (a)(i) and (b)(i);

group (ii) is steps (a)(i), (b)(i), a(ii) and b(ii); and

group (iii) is steps (a)(i), (b)(i), (a)(ii), (b)(ii) and (b)(iii);

and wherein (a)(i), (b)(i), (a)(ii), (b)(ii) and (b)(iii) are:

- (a)(i) determining at least one functional property of one or more compounds;
- (b)(i) making a further library via the method according to claim 1 wherein said modifications are chosen according to the functional determination or determinations made in step (a)(i); ~~and/or;~~
- (a)(ii) determining at least one structural feature of one or more compounds;
- (b)(ii) making a further library via the method according to claim 1, wherein said modifications are chosen according to the structural determination or determinations made in step (a)(ii); and[[/or,]]
- (b)(iii) making a further library via the method according to claim 1, wherein said modifications are chosen according to both said functional determination(s) made in step (a)(i) and said structural determination(s) made in step (a)(ii).

16. (Withdrawn/Previously Presented) A method of producing a supplementary library of modified heparan derivatives comprising steps (singly or jointly)

- (i) screening a library of heparan sulfate derivatives for compounds which have particular structural and/or functional characteristics,
- (ii) determining at least one structural feature of the compounds having said particular structural and/or functional characteristics, or
- (iii) determining at least one functional property of the compounds having said particular structural and/or functional characteristics, or
- (iv) determining at least one functional and one structural property of the compounds having said particular structural and/or functional characteristics;  
wherein steps (ii), (iii) and (iv) being are followed by step (v):

- (v) making said further library ~~via~~ according to the methods method of claim 1 wherein the modifications and number of modification steps are chosen according to the determinations of steps (ii), (iii) or (iv).
17. (Withdrawn/Previously presented) The method according to claim 16 wherein the library of step (i) is made by a method according to claim 1.
18. (Withdrawn/Previously presented) The method according to claim 16 wherein at step (v) a single combination of modification steps is chosen in order to reproduce only the compound(s) having said desired characteristics.
19. (Withdrawn/Previously presented) The method according to claim 16 wherein the structural determination(s) made at step (ii) or (iv) is/are provided by the discreet known location, in a spatially separated library, of the compounds having said particular structural and/or functional characteristics.
20. (Withdrawn) A library containing at least two heparan sulfate derivatives produced by the method of claim 1.
21. (Withdrawn) The library according to claim 20 in which the compounds contained therein are spatially separated from each other.
22. (Withdrawn) The library, or components of the library produced by the method of claim 1, in which said components are:
- (a) spatially separated,
  - (b) spatially separated into defined locations,
  - (c) spatially separated into defined locations and attached to a surface,
  - (d) spatially separated such that an interaction between one or more compounds within said library and the molecule, complex of molecules, cell or organism of interest can be detected,

(e) spatially separated into defined locations such that an interaction between one or more compounds within said library and the molecule, complex of molecules, cell or organism of interest can be detected,

(f) spatially separated into defined locations and attached to a surface such that an interaction between one or more compounds within said library and the molecule, complex of molecules, cell or organism of interest can be detected.

23. (Previously Presented) The method of claim 15 comprising step K.

24. (Withdrawn) A method for producing a heparan sulfate derivative characterized by a selected functional property, said method comprising the steps:

(a) determining at least one functional property of one or more heparan sulfate derivatives compounds;

(b) making a library via the method according to claim 1 wherein said modifications are chosen according to the at least one functional property determined in step (a);

(c) screening said library for said at least one functional property;

(d) making a second library via the method according to claim 1; and

(e) isolating a heparan sulfate derivative characterized by a selected functional property.

25. (Withdrawn) The method of claim 24 comprising step K.